



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,900	11/26/2003	Francois Le Maut	FR920020049US1	2917
25799	7590	06/22/2009		
IBM CORPORATION PO BOX 12195 DEPT YXSA, BLDG 002 RESEARCH TRIANGLE PARK, NC 27709			EXAMINER HOUSHMAND, HOOMAN	
			ART UNIT 2419	PAPER NUMBER
			NOTIFICATION DATE 06/22/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

RPSIPLAW@US.IBM.COM

Office Action Summary

Application No.

10/722,900

Applicant(s)

LE MAUT ET AL.

Examiner

Hooman Houshmand

Art Unit

2419

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because legal phraseology such as "said" (line 2) has been used. There are spelling and grammatical errors. The text appears to be a literal translation into English, and is difficult to understand. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 28-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 28 line 1 recites "*a program product*" which is software and is non-statutory subject matter.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 28-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

7. Claim 28 lines 1-3 recites "*A program product comprising: a computer useable medium having computer readable code stored therein*". The specification does not describe how a *program* (software) *product* may *comprise a computer useable medium having computer readable code stored therein*.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
10. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

11. Claim elements (claim 1 lines 3-13) *"means (271) for allocating a temporary storage location (ID) in a packet buffer to each received data packets; means (510, 550) using predefined parameters for pointing to an output register (540) previously assigned to corresponding flow of each received data packet, and means (270) coupled to the allocation means and to the pointing means for determining if each received data packet is the next in sequence of the corresponding flow, by comparing the packet sequence number (PSN) of said each received data packet to the last packet sequence number (PSNc, PSNh) used by the pointed output register",*

claim 4 *"the means for pointing further comprise means (550) for assigning a new output register to each new flow of data packets",*

claim 5 *"the first Content Addressable Memory further comprises means (514, 523) for preventing over filling of said first Content Addressable Memory",*

claim 9 *"scheduling means (280) coupled to the determination means for selecting one of the in-process data packets to be output",*

claim 10 *"scheduling means is coupled to each of the valid-bit latches to select one valid-bit latch having an active status",*

claim 14 *"means (205) for load balancing over a plurality of independent switching planes the data packets",*

claim 15 *"means (220) for scheduling the switching of the data packets over the plurality of independent switching planes",*

are a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed functions.

Applicant is required to:

- (a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or
- (b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

- (a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or
- (b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

12. The claim limitations, claim 2 lines 1-7 " *the means for pointing to an output register comprise a first Content Addressable Memory (510) wherein each entry (512) includes a search field (515) having a source identifier, a routing index and a priority level, and an associated identifier field including a Cross Reference Index (520) to point to a previously assigned output register among a plurality of output registers (500)*", claim 6 "*the determination means further comprise a second Content Addressable Memory (400) wherein each entry including a source identifier (415), a routing index (420), a priority level (425) and the packet sequence number (430) of each stored data packet, and an associated identifiers field (435) to give a packet buffer identifier (ID) that identifies the storage location allocated to each received data packet*", claim 11 "*allocating means (265) comprise a free buffer list (470) to allocate a free temporary storage location (ID) to each received data packet (460)*", claim 13 "*counting means (210, 360, 385) for sequentially numbering data packets of a same flow*",

use the phrase "means for" or "step for", but they are modified by some structure, material, or acts recited in the claim. It is unclear whether the recited structure, material, or acts are sufficient for performing the claimed functions which would preclude application of 35 U.S.C. 112, sixth paragraph.

If applicant wishes to have the claim limitations treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claims so that the phrase "means for" or "step for" is clearly not modified by sufficient structure, material, or acts for performing the claimed function.

If applicant does not wish to have the claim limitations treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claims so that it will clearly not be a means (or step) plus function limitation (e.g., deleting the phrase "means for" or "step for").

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1, 11 (as dependent on 1), 13, 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salamat (US 20030012200 A1), in view of Sasagawa (US 20080253379 A1).

Claim 1. Salamat teaches ([0010] receiving and re-sequencing out-of-order data packets, comparison against threshold levels of sequence numbers associated with packets already received and successfully sequenced. range of sequence numbers up to a predetermined threshold. memory space to store a sequence and compare it against incoming data packets) *a system for re-sequencing per flow data packets received by the at least one destination egress side comprising: means for allocating a temporary storage location in a packet buffer to each received data packets; means using predefined parameters for pointing to an output register previously assigned to*

corresponding flow of each received data packet, and means coupled to the allocation means and to the pointing means for determining if each received data packet is the next in sequence of the corresponding flow, by comparing the packet sequence number of said each received data packet to the last packet sequence number used by the pointed output register ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Salamat does not teach egress adapter.

In the same field of endeavor, Sasagawa discloses ([0043] egress adapter terminates MPLS in the packet router; this packet router is an egress of MPLS) egress adapter.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Sasagawa with Salamat, thus modifying Salamat to include an egress adapter, to specify a variety of routes provided by MPLS.

Claim 11 (as dependent on claim 1). Salamat further teaches *the allocating means comprise a free buffer list to allocate a free temporary storage location to each received data packet* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Claim 13. Salamat further teaches *counting means for sequentially numbering data packets of a same flow* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Salamat does not teach *ingress adapter*.

In the same field of endeavor, Sasagawa discloses ([0014]) *ingress adapter*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Sasagawa with Salamat, thus modifying Salamat to include an ingress adapter, to specify a variety of routes provided by MPLS.

Claim 16. Salamat teaches ([0010] receiving and re-sequencing out-of-order data packets, comparison against threshold levels of sequence numbers associated with packets already received and successfully sequenced. range of sequence numbers up to a predetermined threshold. memory space to store a sequence and compare it against incoming data packets) *a method for re-sequencing per flow the data packets received by the at least one destination egress side comprising: allocating a temporary storage location in a packet buffer to each received data packet; extracting predefined parameters using the predefined parameter to search a memory and identifying a cross reference index therefrom; using the Cross Reference Index associated to each received data packet to point to a respective output register previously assigned to the corresponding flow of each received data packet; and comparing the packet sequence number of each received data packet to a packet sequence number stored in the respective pointed output register to determine if said each received data packet is the next in sequence* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance

between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Salamat does not teach *egress adapter*.

In the same field of endeavor, Sasagawa discloses ([0043] egress adapter terminates MPLS in the packet router; this packet router is an egress of MPLS) *egress adapter*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Sasagawa with Salamat, thus modifying Salamat to include an egress adapter, to specify a variety of routes provided by MPLS.

Claim 17. Salamat further teaches *assigning a new output register and a new Cross Reference Index if no associated Cross Reference Index is found for a received data packet; and storing in the new output register the packet sequence number of said received data packet* ([0012] the amount of memory in the system that is available for re-sequencing data packets).

Claim 18. Salamat further teaches *checking if the assigned output register is active* ([0012] the amount of memory in the system that is available for re-sequencing data packets).

Claim 19. Salamat further teaches *assigning a new output register if the assigned output register is found inactive; comparing the packet sequence number of the received data packet to the last packet sequence number used by the inactive assigned output register; and storing in the new output register the packet sequence number of said received data packet if it is the next in sequence, otherwise storing in the new output register the last packet sequence number used by the inactive assigned output register* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Claim 20. Salamat further teaches *releasing the unused Cross Reference Index after a predetermined time value* ([0012] re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the

threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Claim 21. Salamat further teaches *the assigned output registers further comprise a packet buffer identifier that identifies the storage location allocated to each received data packet* ([0012] amount of memory in the system that is available for re-sequencing data packets).

15. Claim 2-10, 11 (as dependent on claim 2), 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salamat, in view of Sasagawa as applied to claims 1 and 16 above, and further in view of Bryers (US 20030126233 A1).

Claim 2. Salamat does not teach *the means for pointing to an output register comprise a first Content Addressable Memory wherein each entry includes a search field having a source identifier, a routing index and a priority level, and an associated identifier field including a Cross Reference Index to point to a previously assigned output register among a plurality of output registers.*

In the same field of endeavor, Bryers discloses *the means for pointing to an output register comprise a first Content Addressable Memory* ([0550] CAM) *wherein each entry includes a search field having a source identifier* ([0559]), *a routing index* ([0155]) *and a priority level* ([0551]), *and an associated identifier field including a Cross*

Reference Index to point to a previously assigned output register among a plurality of output registers.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Claim 3. Salamat further teaches *packet sequence number equal to the last packet sequence number received for the corresponding flow ([0010] receiving and re-sequencing out-of-order data packets, comparison against threshold levels of sequence numbers associated with packets already received and successfully sequenced. range of sequence numbers up to a predetermined threshold. memory space to store a sequence and compare it against incoming data packets).*

Salamat does not teach *the identifier field further contains an activity identifier to indicate when a previously assigned output register is no longer active.*

In the same field of endeavor, Bryers discloses *the identifier field further contains an activity identifier to indicate when a previously assigned output register is no longer active ([0161] active traffic).*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Claim 4. Salamat does not teach *the means for pointing further comprise means for assigning a new output register to each new flow of data packets.*

In the same field of endeavor, Bryers discloses *the means for pointing further comprise means for assigning a new output register to each new flow of data packets* ([0161] active traffic).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Claim 5. Salamat does not teach *the first Content Addressable Memory further comprises means for preventing over filling of said first Content Addressable Memory.*

In the same field of endeavor, Bryers discloses *the first Content Addressable Memory further comprises means for preventing over filling of said first Content Addressable Memory* ([0550] CAM).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with memory management, to properly provide network services.

Claim 6. Salamat further teaches ([0010] receiving and re-sequencing out-of-order data packets, comparison against threshold levels of sequence numbers associated with packets already received and successfully sequenced. range of sequence numbers up to a predetermined threshold. memory space to store a sequence and compare it against incoming data packets) *the packet sequence number of each stored data packet.*

Salamat does not teach *the determination means further comprise a second Content Addressable Memory wherein each entry including a source identifier, a routing index, a priority level of each stored data packet, and an associated identifiers field to give a packet buffer identifier that identifies the storage location allocated to each received data packet.*

In the same field of endeavor, Bryers discloses *the determination means further comprise a second Content Addressable Memory ([0550] CAM) wherein each entry including a source identifier ([0559]), a routing index ([0155]), a priority level ([0551]) of each stored data packet, and an associated identifiers field to give a packet buffer identifier that identifies the storage location allocated to each received data packet.*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Claim 7. Salamat further teaches ([0010] receiving and re-sequencing out-of-order data packets, comparison against threshold levels of sequence numbers associated with packets already received and successfully sequenced. range of sequence numbers up to a predetermined threshold. memory space to store a sequence and compare it against incoming data packets) *the output register further comprise: a packet sequence number and a packet buffer identifier of an in-process data packet.*

Salamat does not teach *a valid-bit latch to set an active/not active status that indicates if the in-process data packet is already output.*

In the same field of endeavor, Bryers discloses *a valid-bit latch to set an active/not active status that indicates if the in-process data packet is already output* ([0161] active traffic).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific traffic control details, to properly provide network services.

Claim 8. Salamat further teaches *the output register further comprise a count to maintain a value for each flow the number of data packets stored in the packet buffer waiting for being output* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data

packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Claim 9. Salamat further teaches *scheduling means coupled to the determination means for selecting one of the in-process data packets to be output* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Claim 10. Salamat further teaches *the scheduling means is coupled to each of the valid-bit latches to select one valid-bit latch having an active status* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance between the sequence number

associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Claim 11 (as dependent on claim 2). Salamat further teaches *the allocating means comprise a free buffer list to allocate a free temporary storage location to each received data packet* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side. egress side of the system receiving an out of sequence data packet, a re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. The re-sequencing engine discards or re-sequences the received data packet based on a predetermined threshold level of distance, the threshold level of distance being a function of the amount of memory in the system that is available for re-sequencing data packets).

Claim 22. Salamat further teaches *writing the packet sequence number of each received data packet that is not the next in sequence, the write address being identified by the storage location allocated to said each received data packet* ([0010] receiving and re-sequencing out-of-order data packets, memory space to store a sequence and compare it against incoming data packets).

Salamat does not teach *writing in a Content Addressable Memory, the source identifier, the priority level.*

In the same field of endeavor, Bryers discloses *writing in a Content Addressable Memory ([0550] CAM), the source identifier ([0559]), the priority level ([0551]).*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Claim 23. Salamat does not teach *the predefined parameters include Priority Level, Routing Index and Source Identifier.*

In the same field of endeavor, Bryers discloses *the predefined parameters include Priority Level ([0551]), Routing Index ([0155]) and Source Identifier ([0559]).*

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

16. Claim 12 (as dependent on claim 1) is rejected under 35 U.S.C. 103(a) as being unpatentable over Salamat, in view of Sasagawa as applied to claim 1 above, and further in view of Yen (US 20020150097 A1).

Claim 12 (as dependent on claim 1). Salamat does not teach *the data packets comprise unicast and multicast data packets*.

In the same field of endeavor, Yen discloses *the data packets comprise unicast and multicast data packets* ([0005]).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Yen with Salamat, thus further modifying Salamat to include unicast and multicast data packets, so that teleconferencing, videoconferencing and connection-oriented communications are enabled.

17. Claim 12 (as dependent on claim 2) is rejected under 35 U.S.C. 103(a) as being unpatentable over Salamat, in view of Sasagawa, further in view of Bryers as applied to claim 2 above, and further in view of Yen.

Claim 12 (as dependent on claim 2). Salamat does not teach *the data packets comprise unicast and multicast data packets*.

In the same field of endeavor, Yen discloses *the data packets comprise unicast and multicast data packets* ([0005]).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Yen with Salamat, thus further modifying Salamat to include unicast and multicast data packets, so that

teleconferencing, videoconferencing and connection-oriented communications are enabled.

18. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salamat, in view of Sasagawa as applied to claims 1 above, and further in view of Beshai (US 20020083195 A1).

Claim 14. The references applied to the parent claim teach *ingress adapter*.

Salamat does not teach *means for load balancing over a plurality of independent switching planes the data packets*.

In the same field of endeavor, Beshai teaches ([0122] use of service-rate controls to ensure that a multi-channel link are appropriately loaded, balancing of data traffic load across the channels of each multi-channel link emanating from each source node, ensure that the queueing delay at the input ports of each of the multiple switching planes is negligible) *means for load balancing over a plurality of independent switching planes the data packets*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Beshai with Salamat, thus further modifying Salamat to include load balancing over a plurality of independent switching planes the data packets, to keep delays to a minimum.

Claim 15. The references applied to the parent claim teach *ingress adapter*.

Salamat does not teach *means for scheduling the switching of the data packets over the plurality of independent switching planes*.

In the same field of endeavor, Beshai teaches ([0122] use of service-rate controls to ensure that a multi-channel link are appropriately loaded, balancing of data traffic load across the channels of each multi-channel link emanating from each source node, ensure that the queueing delay at the input ports of each of the multiple switching planes is negligible) *means for scheduling the switching of the data packets over the plurality of independent switching planes*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Beshai with Salamat, thus further modifying Salamat to include scheduling the switching of the data packets over the plurality of independent switching planes, to keep delays to a minimum.

19. Claims 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salamat, in view of Bryers.

Claim 24. Salamat teaches ([0010] receiving and re-sequencing out-of-order data packets, comparison against sequence numbers associated with packets already received and successfully sequenced. memory space to store a sequence and compare it against incoming data packets) *a method comprising: providing a plurality of registers with each register associated with a flow* ([0039] re-sequencing engine performs operations on distinct traffic streams) *providing a table with each entry associated with a*

register within said plurality of registers; receiving a packet; searching the table with parameters selected from the packet; if a match is found, correlating at least one parameter identified in a register associated with said matching entry with parameter in the packet to determine sequence of said packet relative to a packet identified in said associated register ([0012] re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. level of distance, amount of memory in the system that is available for re-sequencing data packets).

Salamat does not teach a cross reference table.

In the same field of endeavor, Bryers discloses *a cross reference table* ([0550] content addressable memory).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Claim 25. *Salamat does not teach if a match is not found making a new entry for said packet in said cross reference table and associating a register from said plurality of registers with said packet.*

In the same field of endeavor, Bryers discloses *if a match is not found making a new entry for said packet in said cross reference table and associating a register from said plurality of registers with said packet* ([0550] content addressable memory).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Claim 26. Salamat further teaches *if packet is in sequence with packet identified in said associated register setting a valid bit to post request for service to egress scheduler* ([0012] system including an ingress side, an egress side, handling data packets received at the egress side).

Claim 27. Salamat further teaches *if packet is out of sequence relative to packet identified within said associated register reset a valid bit indicating no request is posted to egress scheduler* ([0012] handling data packets received at the egress side. The re-sequencing engine discards or re-sequences the received data packet).

Claim 28. Salamat teaches ([0010] receiving and re-sequencing out-of-order data packets, comparison against sequence numbers associated with packets already received and successfully sequenced. memory space to store a sequence and compare it against incoming data packets) *a program product comprising: a computer useable medium having computer readable code stored therein, said computer readable code including a first instruction module with instructions to examine a packet and extract a set of predefined parameters therefrom; a second instruction module with instructions*

that uses the extracted predefined parameters to search a table having each entry associated with a register; a third instruction module having instructions to correlate parameters in said packet with parameters stored in an associated register to determine sequence of said packet to packet identified in said register if a match is found in said register ([0012] re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. level of distance, amount of memory in the system that is available for re-sequencing data packets).

Salamat does not teach an index table.

In the same field of endeavor, Bryers discloses an index table ([0550] content addressable memory).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Claim 29. *Salamat does not teach a fourth instruction module including instructions for adding an entry for said packet to the index table if a match is not found.*

In the same field of endeavor, Bryers discloses a fourth instruction module including instructions for adding an entry for said packet to the index table if a match is not found ([0550] content addressable memory).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

20. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salamat, in view of Bryers, and further in view of Beshai.

Claim 30. Salamat teaches ([0010] receiving and re-sequencing out-of-order data packets, comparison against sequence numbers associated with packets already received and successfully sequenced. memory space to store a sequence and compare it against incoming data packets) *an apparatus comprising: a system for ensuring packets are in predefined sequence, said system including a register stack wherein each register is associated with a flow* ([0039] re-sequencing engine performs operations on distinct traffic streams); *a table with each entry associated with a register; and a controller that selects parameters from a received packet to search the table and determine sequence of said packet relative to a packet identified in a register associated with a match entry* ([0012] re-sequencing engine of the system measures the distance between the sequence number associated with the out of sequence data packet and the sequence number of the last packet that was received in sequence. level of distance, amount of memory in the system that is available for re-sequencing data packets).

Salamat does not teach *a cross reference index table*.

In the same field of endeavor, Bryers discloses *a cross reference index table* ([0550] content addressable memory).

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Bryers with Salamat, thus modifying Salamat to include a CAM with specific routing details, to properly provide network services.

Salamat does not teach *a plurality of switching planes; a buffer for storing packets transported through said switching planes*.

In the same field of endeavor, Beshai teaches ([0122] use of service-rate controls to ensure that a multi-channel link are appropriately loaded, balancing of data traffic load across the channels of each multi-channel link emanating from each source node, ensure that the queueing delay at the input ports of each of the multiple switching planes is negligible) *a plurality of switching planes; a buffer for storing packets transported through said switching planes*.

It would have been obvious to a person having ordinary skill in the art, at the time that the invention was made, to combine the teachings of Beshai with Salamat, thus further modifying Salamat to include a plurality of switching planes, to keep delays to a minimum.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hooman Houshmand whose telephone number is (571) 270-1817. The examiner can normally be reached on Monday - Friday 8am - 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. H./
Examiner, Art Unit 2419

/Jayanti K. Patel/

Supervisory Patent Examiner, Art Unit 2419